CLAIMS

1. A device having electrical and mechanical components the device comprising multiple layers in which:

a first layer or set of layers arranged to function as one or more electrodes or conductors; and

a second layer arranged to function as one or mor press contacts or wire bond pads, wherein

the second layer has different physical properties than the first layer, wherein the first layer or set of layers is relatively hard or tough and the second layer is relatively soft or malleable.

2. A device according to claim 1, wherein the first layer or set of layers is formed from titanium.

3. A device according to claim 1, wherein there is a first set of layers formed from titanium and titanium nitride.

4. A device according to any one of the preceding claims, wherein the second softer or more malleable layer is formed from one of aluminium or gold.

5. A device according to any one of the preceding claims, wherein the first layer or set of layers is approximately 7000 Å thick.

6. A device according to any one of the preceding claims, wherein the first layer or set of layers is approximately 3000 Å to 10000 Å thick.

7. A device according to any one of the preceding claims, wherein the second layer is approximately 5000 Å thick.

8. A device according to any one of the preceding claims, wherein the second layer is approximately 2000 Å to 6000 Å thick.

9. A device according to any one of the preceding claims, wherein additional titanium is formed on one or more of the surfaces that form the inner surface of a sealed cavity in the completed device.

10. A method of forming electrical and mechanical components in a micro-electromechanical device, the method comprising the steps of:

forming a first layer which functions as one or more electrodes or conductors; and

forming a second layer which functions as one or more press contacts or wire bond pads, wherein

the second layer has different physical properties than the first layer, wherein the first layer or set of layers is relatively hard or tough and the second layer is relatively soft or malleable.

11. A method according to claim 10, wherein the first layer or set of layers and second layer are selectively etched to form the electrodes/conductors or bond pads/press contact respectively.

12. A method according to claim 10, wherein the patterning processes includes photolithography and etching.

13. A method according to any one of claims 10 to 12, wherein the hard layer is the first layer to be deposited on the glass and, subsequently, the second layer is deposited on top of the first layer.

14. A method according to any one of claims 10 to 13, wherein the layers are then subjected to two or more photolithography steps which firstly pattern the press

contacts and wire bond pads in to the second layer and, secondly, pattern the conductors and electrodes in to the first layer.

15. A method according to any of claims 10 to 14, wherein additional titanium is formed on one or more of the surfaces that form the inner surface of a sealed cavity in the completed device.

16. A method according to any one of claims 10 to 15, wherein the titanium acts as a getter to reduce the gas pressure in a sealed cavity after anodic bonding.

17. A method according to any one of claims 10 to 16, wherein the titanium acts as a getter to reduce the gas pressure in a sealed cavity after anodic bonding and this preferably occurs at approximately room temperature.

18. A method according to any one of claims 10 to 17, wherein the titanium acts as a getter to reduce the gas pressure in a sealed cavity after anodic bonding and during or after a heat treatment.

19. A method according to any one of claim 10 to 18, wherein the first layer is wet etched in an aqueous solution of ammonium hydroxide and hydrogen peroxide.

20. A method according to claim 19, wherein the solution is made up of one part ammonium hydroxide, five parts hydrogen peroxide and nine parts water.

21. A method according to any one of claims 10 to 20, wherein the first and second layers are placed on the glass substrate instead of the semiconductor substrate to ensure that there is low stray capacitance within the device.